Lecture #12

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Discrete Probability Distributions

Poisson Distribution

- parameter `lambda` for constant rate
- bounded at 0, discrete
- good for rare events
- as lambda gets large, Poisson resembles normal

Binomial Distriubtion

- parameter `prob` for probability of success
- parameter `size` for number of trials
- if `size = 1` special Bernoulli trial
- bounded at 0,size
- as size gets large with small p, Bernouli resembles Poisson

Negative Binomial Distribution

- parameter `prob` for probability of success
- parameter `size` for number of successes
- distribution is the number of failures till you reach a number of successes
- geometric series is special case for `size` = 1

Sampling from a vector of values

- sampling with or without replacement
- sampling equiprobably or with specified probabilities

Mixture model

- use for conditional events
- birds p(finding a nest site)*p(producing offspring)